

PORT COLBORNE

water pollution control plant

1
9
6
8

LIBRARY COPY

OCT 27 1969

ONTARIO WATER
RESOURCES COMMISSION

ONTARIO WATER RESOURCES COMMISSION

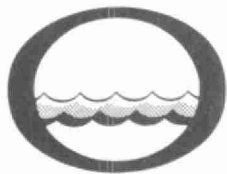
Division of Plant Operations

Copyright Provisions and Restrictions on Copying:

This Ontario Ministry of the Environment work is protected by Crown copyright (unless otherwise indicated), which is held by the Queen's Printer for Ontario. It may be reproduced for non-commercial purposes if credit is given and Crown copyright is acknowledged.

It may not be reproduced, in all or in part, for any commercial purpose except under a licence from the Queen's Printer for Ontario.

For information on reproducing Government of Ontario works, please contact ServiceOntario Publications at copyright@ontario.ca



Water management in Ontario

Ontario
Water Resources
Commission

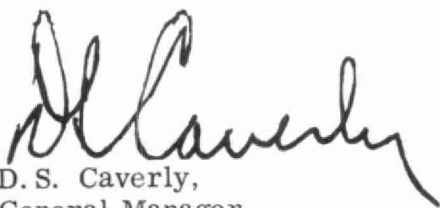
135 St. Clair Ave. W.
Toronto 7
Ontario

We are pleased to present you with the Operating Summary for the water pollution control facilities operated for you during 1968.

Both the financial and technical information presented should be of assistance to your present and future planning in this important phase of municipal activity.

A new format has been devised to allow greater readability with equally detailed content. We trust that this will meet with your approval.

Our staff wish to express their appreciation for your co-operation throughout the year.


D. S. Caverly,
General Manager.


D. A. McTavish, P. Eng.,
Director,
Division of Plant Operations.

LIBRARY COPY

OCT 27 1969

ONTARIO WATER
RESOURCES COMMISSION

ONTARIO WATER RESOURCES COMMISSION

CHAIRMAN

Dr. James A. Vance

VICE-CHAIRMAN

J. H. H. Root, M. P. P.

COMMISSIONERS

H. E. Brown

D. A. Moodie

L. E. Venchiarutti

GENERAL MANAGER

D. S. Caverly

ASSISTANT GENERAL MANAGERS

L. E. Owers

K. H. Sharpe

F. A. Voegel

A. K. Watt

COMMISSION SECRETARY

W. S. MacDonnell

DIVISION OF PLANT OPERATIONS

Director

D. A. McTavish

Assistant Director

C. W. Perry

Regional Supervisor

A. C. Beattie

Operations Engineer

R. S. McKittrick

135 St. Clair Avenue West,
Toronto 7

PORT COLBORNE
water pollution control plant

operated for

THE CITY OF PORT COLBORNE

by the

ONTARIO WATER RESOURCES COMMISSION

1968 ANNUAL OPERATING SUMMARY

FOREWORD

● This operating summary outlines the project's technical capabilities and financial status in 1968. Such information mirrors past and present performance, but a major intention is to anticipate the future -- to solve problems before they occur.

The new format in which this year's data are presented is designed to offer a higher level of readability than in the past, without a corresponding decrease in compactness, accuracy and detail.

Although your Regional Operations Engineer carries the major responsibility for the contents of the report, those involved in its preparation are attached to several Commission sections and divisions. The statistics section of the Division of Plant Operations compiled the information for the graphs and charts. The draughting section of the Division of Sanitary Engineering drew the graphs. The Division of Finance provided all cost data.

Only the close co-operation of these departments allowed the publication of this summary.

CONTENTS

Title page	i
Foreword	ii
'68 Review	1
Project Costs	2
Operating Costs	6
Process Data;	
West Side	9
East Side	18
Conclusions and Recommendations	Inside Back Cover

'68 REVIEW

A total flow of 926.85 million gallons was treated at both the East Side and West Side plants in 1968. This represents an overall increase of approximately 11 percent over the 1967 flow. The dry weather design flow for the West Side plant was exceeded approximately 85 percent of the time. However, this was offset by the relatively weak strength of the raw sewage, enabling the West Side plant to maintain a high degree of treatment efficiency.

The East Side plant was hydraulically overloaded most of the time during 1967. This, coupled with the fact that aeration section renovations were being carried out, meant that there was considerably bypassing of flow during the year.

The high flows combined with the relatively weak raw sewage strengths indicate an excessive amount of sewer infiltration. This factor, combined with the multiple pumping, results in relatively high treatment costs.

The total treatment cost was \$78,488.49. This represents a cost of \$84.68 per million gallons or 12 cents per pound of BOD removed.

The minimum recommended renovations to the East Side plant were begun in 1968 with the replacement of the aerator support bridges. The amount of breakdown maintenance decreased, as the East Side project was subjected to an intensive maintenance program.

The routine maintenance of the West Side plant and satellite pumping stations was satisfactory.

PROJECT COSTS

2-0047-59

NET CAPITAL COST (Final)	
Long Term Debt to OWRC	<u>\$625,008.36</u>
 Debt Retirement Balance at Credit	
(Sinking Fund) December 31, 1968	<u>\$107,282.00</u>
 Net Operating	\$ 78,488.49
Debt Retirement	12,613.00
Reserve	3,151.62
Interest Charged	<u>35,090.12</u>
 TOTAL	<u>\$129,343.23</u>

RESERVE ACCOUNT

Balance at January 1, 1968	\$ 28,026.42
 Deposited by Municipality	3,151.62
 Interest Earned	1,726.60
	\$ 32,904.64
 Less Expenditures	
 Balance at December 31, 1968	<u>\$ 32,904.64</u>

2-0047-59 (Special Operating Agreement)

NET CAPITAL COST	
Long Term Debt to OWRC	\$ Nil
Debt Retirement Balance at Credit (Sinking Fund) December 31, 1968	\$ Nil
Net Operating	\$ Nil
Debt Retirement	
Reserve	5,100.00
Interest Charged	
TOTAL	<u>\$5,100.00</u>

RESERVE ACCOUNT

Balance at January 1, 1968	\$ Nil
Deposited by Municipality	5,100.00
Interest Earned	115.21
	\$5,215.21
Less Expenditures	
Balance at December 31, 1968	<u>\$5,215.21</u>

2-0073-60

NET CAPITAL COST (Final)	\$325,199.95
DEDUCT - Portion Financed by CMHC-MDLB (Final)	<u>47,154.39</u>
Long Term Debt to OWRC	<u>\$278,045.56</u>
 Debt Retirement Balance at Credit (Sinking Fund) December 31, 1968	 \$ <u>70,625.10</u>
 Net Operating	\$ 38.91
Debt Retirement	10,088.00
Reserve	1,776.99
Interest Charged	<u>15,610.41</u>
 TOTAL	 \$ <u>27,514.31</u>

RESERVE ACCOUNT

Balance at January 1, 1968	\$ 21,618.94
Deposited by Municipality	1,776.99
Interest Earned	786.38
	\$ 15,182.31
Less Expenditures	
Balance at December 31, 1968	\$ <u>15,182.31</u>

2-0108-62

NET CAPITAL COST (Final)		\$291,992.10
DEDUCT - Payments from Municipalities	\$87,025.24	
- Portion Financed by CMHC-MDLB (Final)	<u>78,293.33</u>	<u>165,318.57</u>
Long Term Debt to OWRC		<u>\$126,673.53</u>
Debt Retirement Balance at Credit (Sinking Fund) December 31, 1968		\$ <u>26,485.28</u>
Net Operating		\$ 49.99
Debt Retirement		4,596.00
Reserve		1,226.15
Interest Charged		<u>7,111.88</u>
TOTAL		\$ <u>12,984.02</u>

RESERVE ACCOUNT

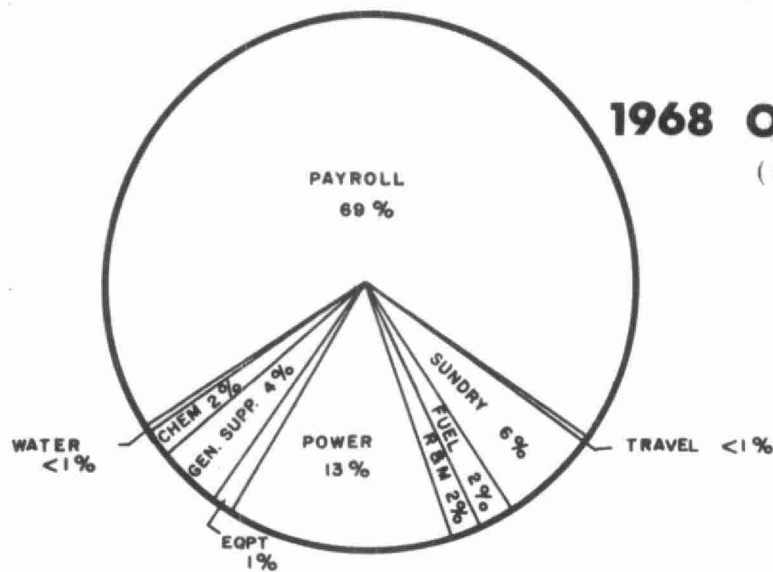
Balance at January 1, 1968	\$ 6,408.85
Deposited by Municipality	1,226.15
Interest Earned	403.38
	\$ 8,038.38
Less Expenditures	<u>117.79</u>
Balance at December 31, 1968	\$ <u>7,920.59</u>

Monthly Operating Costs

MONTH	TOTAL EXPENDITURE	PAYROLL	CASUAL PAY ROLL	FUEL	POWER	CHEMICAL	GENERAL SUPPLIES	EQUIPMENT	REPAIRS & MAINTENANCE	* SUNDRY	WATER	TRAVEL
JAN	3962.63	3659.04	-	101.40	-	-	-	-	124.67	41.84	35.68	-
FEB	5577.88	3675.85	-	186.06	861.53	-	116.38	284.04	10.57	443.45	-	-
MAR	7847.55	5816.76	-	215.67	910.65	-	334.35	-	134.45	435.67	-	-
APRIL	5189.59	3659.04	16.20	132.99	904.69	-	73.04	-	143.86	259.77	-	-
MAY	6265.12	3659.04	16.20	183.23	820.65	477.22	511.13	-	(2.28)	561.54	38.39	-
JUNE	5381.51	3659.04	139.73	97.07	935.67	238.61	522.54	(266.70)	(107.79)	163.34	-	-
JULY	5611.74	3607.11	187.17	66.11	784.05	-	261.77	129.90	21.00	484.68	-	69.95
AUG	7152.85	5522.93	-	12.58	764.29	-	95.31	71.40	288.60	351.31	46.44	-
SEPT	5443.96	3858.43	79.69	57.10	845.20	238.61	275.82	-	-	89.11	-	-
OCT	5951.80	3756.20	192.55	47.41	803.93	477.22	123.94	-	-	550.55	-	-
NOV	6089.35	3675.64	91.19	102.76	689.50	238.61	356.90	-	49.16	761.18	64.41	60.00
DEC	14014.51	9099.72	-	204.84	2191.41	227.25	540.15	175.50	541.22	897.10	-	137.32
TOTAL	78488.49	53648.80	722.73	1407.22	15011.56	1897.52	3211.33	394.14	1203.46	5039.54	184.92	267.27

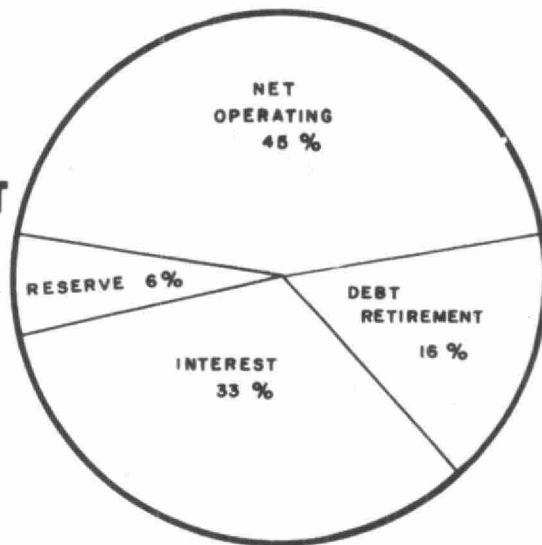
*SUNDRY INCLUDES SLUDGE HAULING COSTS WHICH WERE \$3,395.07

BRACKETS INDICATE CREDIT



TOTAL ANNUAL COST

(ALL PROJECTS)



Yearly Operating Costs

YEAR	M.G.TREATED	TOTAL COST	COST PER MILLION GALLONS	COST PER LB OF BOD REMOVED
1964	425.53	\$57,818.45	\$135.88	17 cents
1965	731.51	64,498.43	88.17	11 cents
1966	682.86	65,868.62	96.46	13 cents
1967	802.96	71,358.82	88.87	11 cents
1968	926.85	78,488.49	84.68	12 cents

Process Data

The following data provide information regarding flows treated by the two Port Colborne Water Pollution Control Plants, the degree of treatment, the digester performance and in the case of the West Side plant, the chlorine dosages required to maintain the required residual.

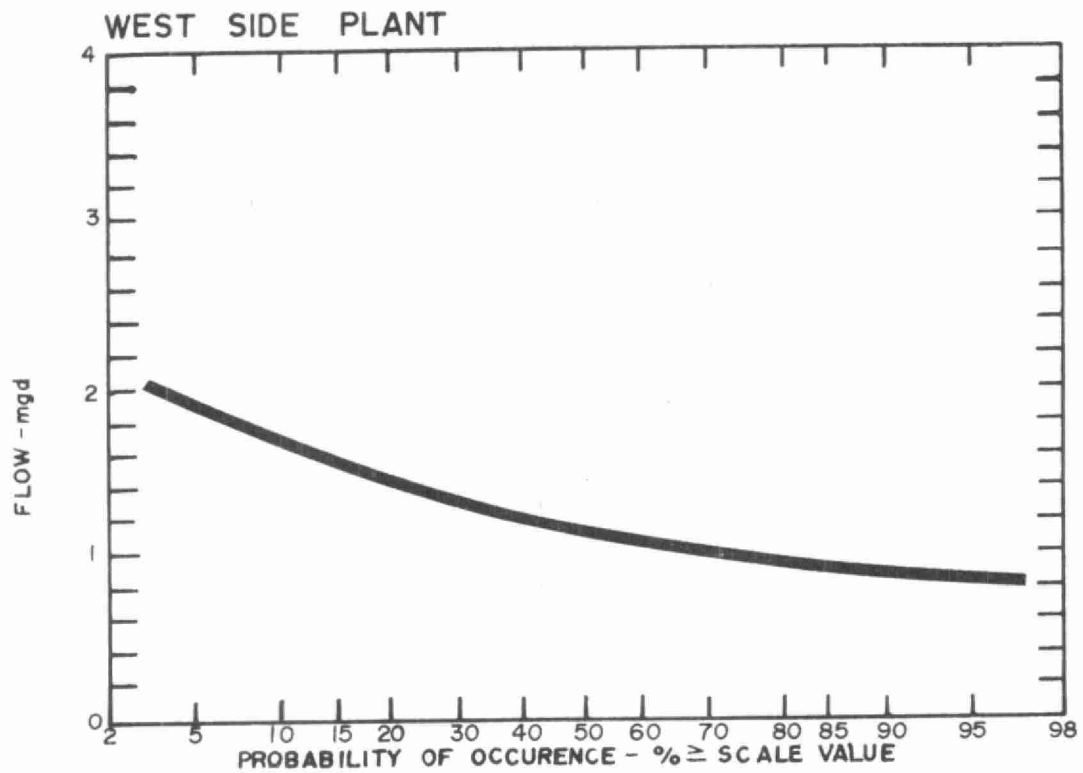
PLANT FLOWS and CHLORINATION

WEST SIDE PLANT

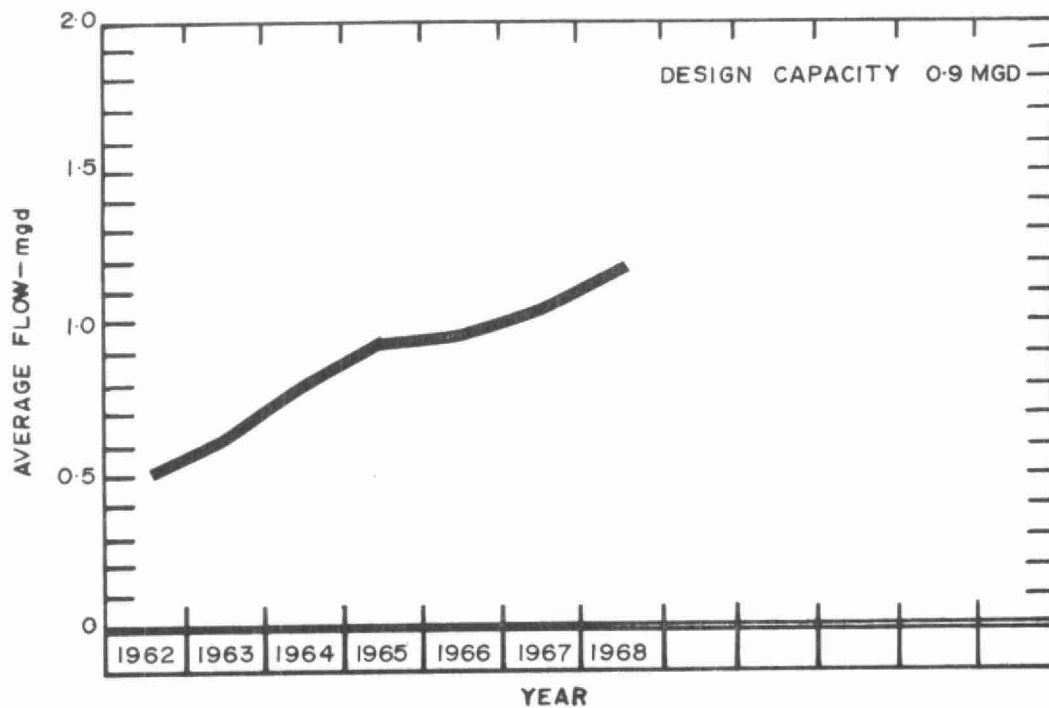
MONTH	TOTAL FLOW mg	AVERAGE DAILY FLOW mg	MAXIMUM DAILY FLOW mg	MINIMUM DAILY FLOW mg	CHLORINE USED lbs.	DOSAGE mg/l
JAN	31.2	1.01	2.66	.42	824	2.6
FEB	29.4	1.01	2.18	.69	704	2.4
MAR	39.1	1.26	1.92	.79	817	2.1
APR	33.1	1.10	1.83	.81	779	2.4
MAY	35.3	1.14	1.64	.80	773	2.2
JUN	34.4	1.15	3.74	.83	943	2.7
JUL	31.4	1.01	1.46	.85	1204	3.8
AUG	38.9	1.26	2.42	.88	1290	3.3
SEPT	33.6	1.12	1.68	.79	1024	3.0
OCT	30.8	1.00	1.50	.60	1031	3.3
NOV	45.0	1.50	2.50	.93	1315	2.9
DEC	43.2	1.39	2.30	.70	978	2.3
TOTAL	425.4	-	-	-	11682	-
AVERAGE	-	1.20	-	-	974	2.7

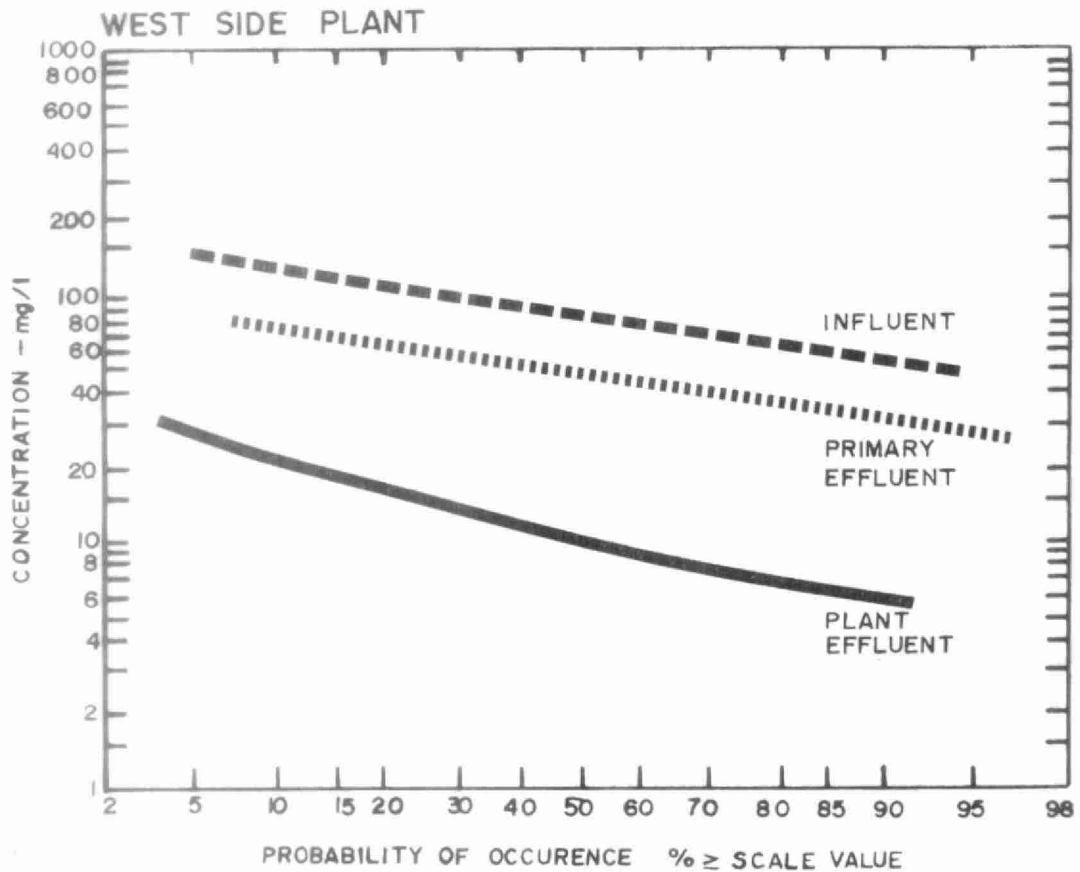
COMMENTS

During 1968 a total of 425.4 mg of raw sewage was given secondary treatment. This represents an increase of approximately 11 percent over the 1967 total flow. The average daily flow of 1.20 mg was in excess of the design dry weather flow of 0.9 mgd. The Probability of Daily Flows graph indicates that daily flow exceeded the design dry weather flow for 85 percent of the time during the year. A maximum daily flow 3.74 mg was recorded in June. Indications are that the hydraulic overloading was primarily due to excessive infiltration into the municipal sewer system. Although such infiltration is undesirable, it has not yet seriously affected the treatment efficiency of the plant.

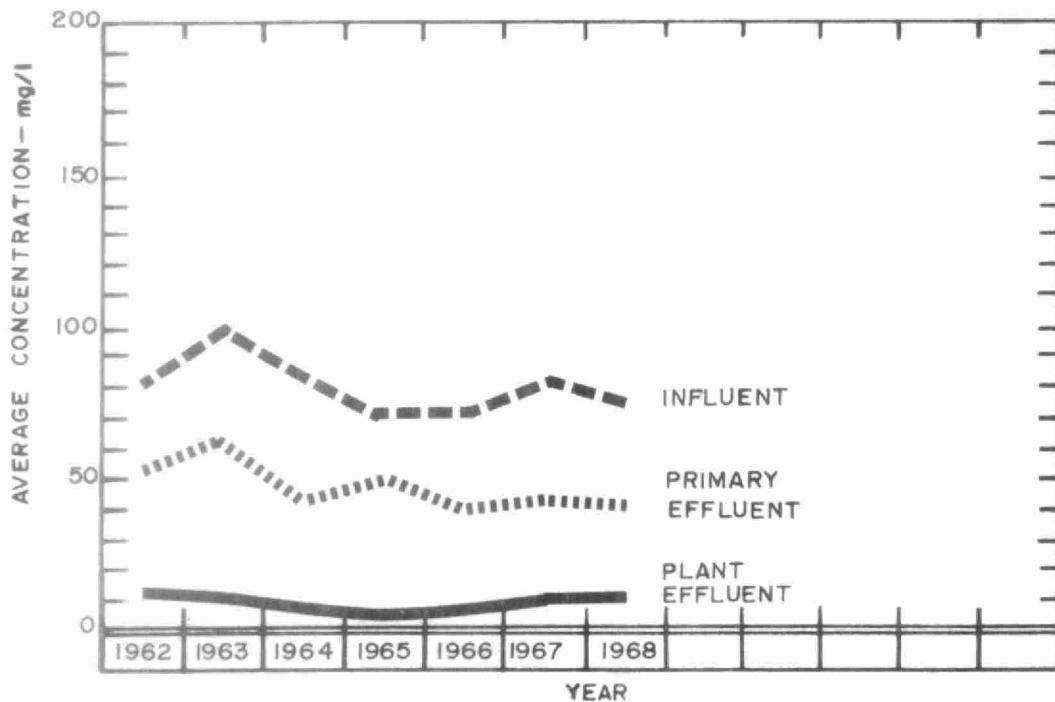


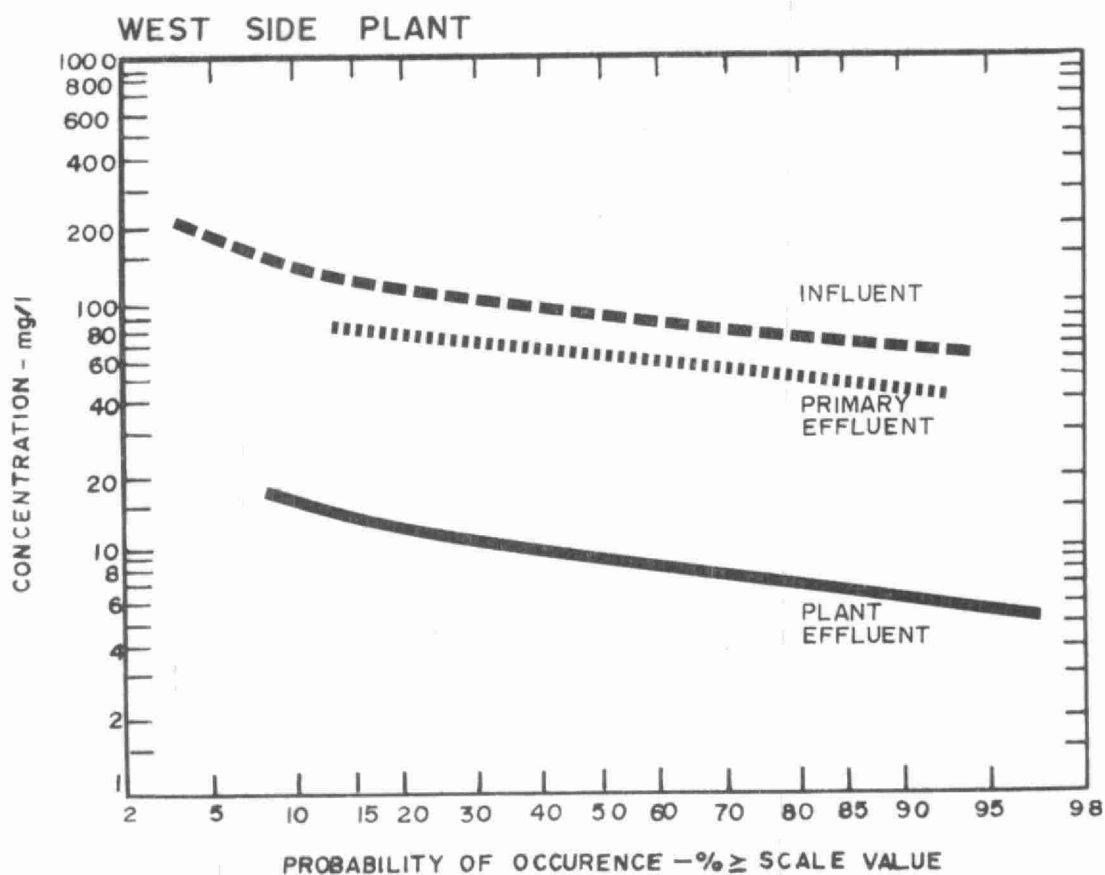
F L O W S



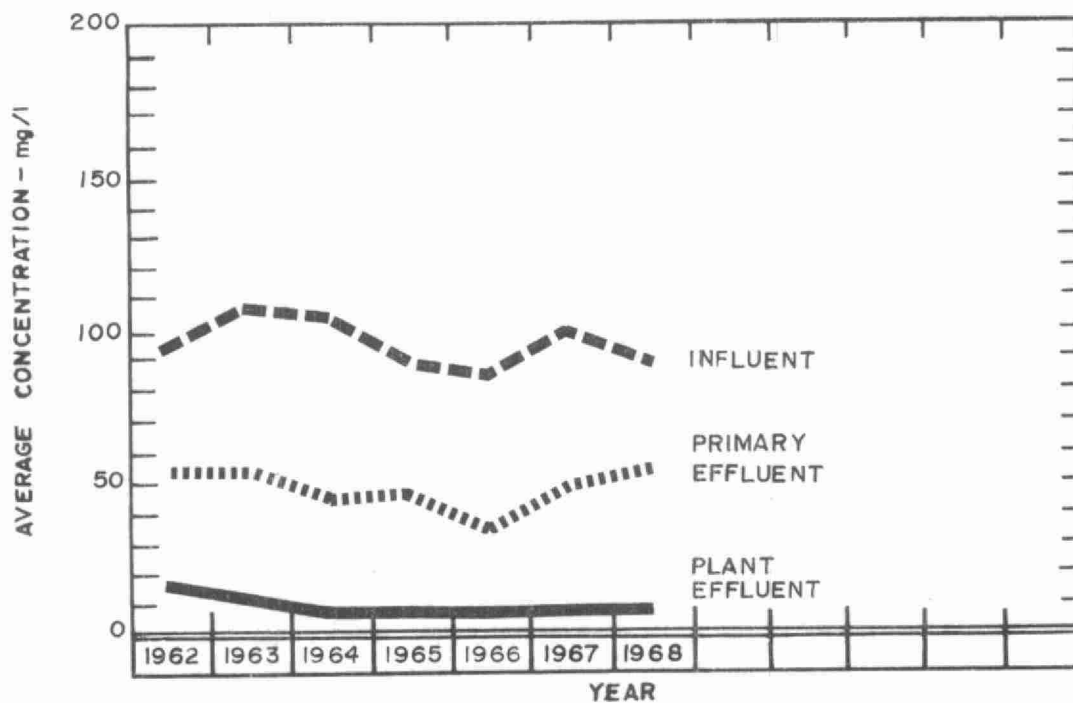


BIOCHEMICAL OXYGEN DEMAND





SUSPENDED SOLIDS



PLANT EFFICIENCY

WEST SIDE PLANT

MONTH	BIOCHEMICAL OXYGEN DEMAND				SUSPENDED SOLIDS				GRIT
	INF CONC ^N mg/l	EFF CONC ^N mg/l	RED ^N %	REMOVAL 10 ³ lb	INF CONC ^N mg/l	EFF CONC ^N mg/l	RED ^N %	REMOVAL 10 ³ lb	REMOVAL ft ³
JAN	72	9	88	19.7	66	8	88	18.1	10
FEB	72	6	92	19.5	6	3	96	24.4	0
MAR	89	7	92	32.0	88	7	92	31.6	-
APR	104	5	95	32.8	132	5	96	42.1	0
MAY	43	3	92	17.5	95	6	94	31.4	28
JUN	68	7	89	20.9	113	17	85	33.1	0
JULY	56	13	77	13.5	81	6	93	23.5	0
AUG	79	23	71	21.8	80	8	90	28.0	0
SEPT	88	16	82	24.2	85	12	86	24.6	28
OCT	82	8	91	22.9	107	7	93	30.8	0
NOV	77	10	87	30.3	54	17	68	16.6	0
DEC	66	22	67	19.0	76	8	89	29.4	37
TOTAL	-	-	-	27.41	-	-	-	333.6	103
AVERAGE	76	11	86	22.9	89	9	90	27.8	9

COMMENTS

The average raw sewage strength was 76 mg/l BOD and 89 mg/l suspended solids. These values are below those normally expected for domestic raw sewage.

The average effluent quality of 11 mg/l BOD and 9 mg/l suspended solids was within OWRC objectives of 15 mg/l for each.

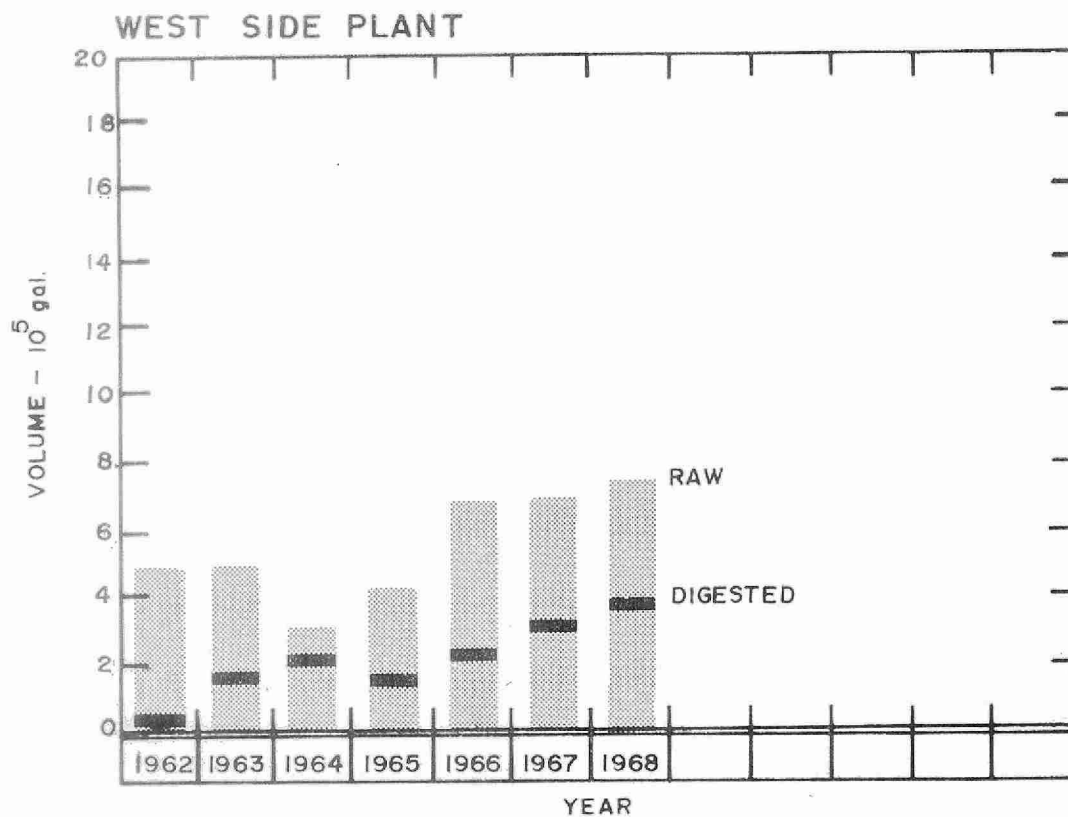
AERATION

WEST SIDE PLANT

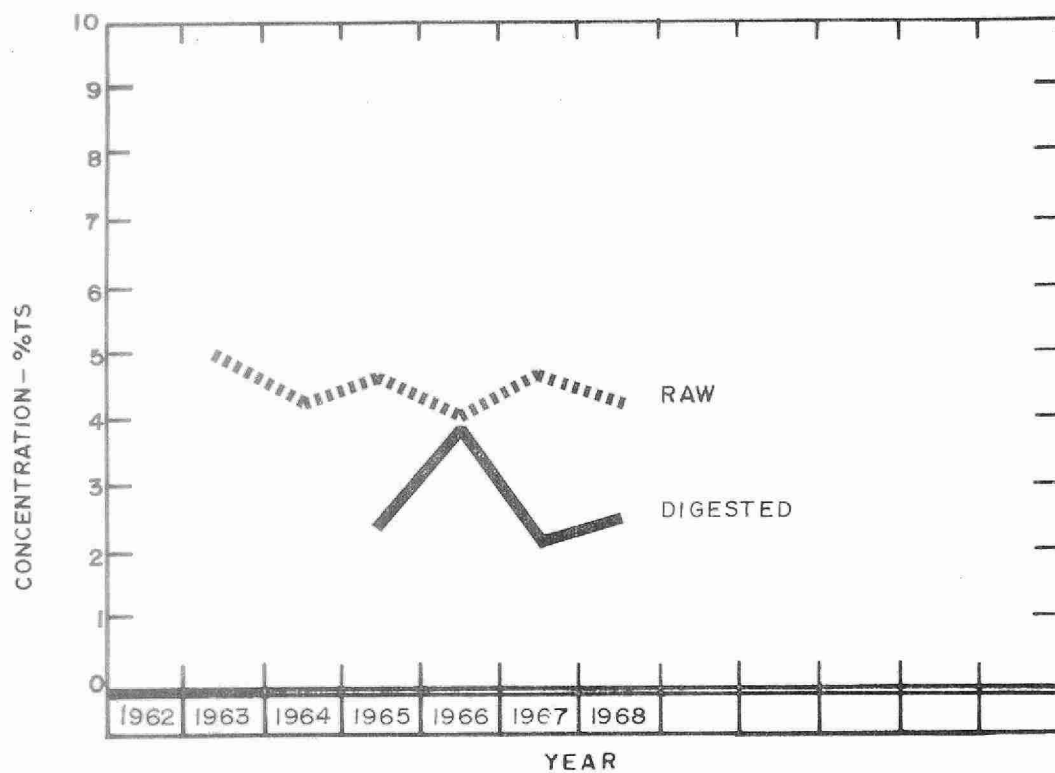
MONTH	AVERAGE FLOW mgd	PRIMARY EFF		SECONDARY EFF		MLSS CONC ^N mg/l	F/M $\left(\frac{\text{lb BOD}}{\text{lb MLSS}}\right)$	AIR USED $\left(\frac{1000 \text{ ft}^3}{\text{lb BOD}}\right)$ REMOVED	WASTE SLUDGE lb
		BOD CONC ^N mg/l	SS CONC ^N mg/l	BOD CONC ^N mg/l	SS CONC ^N mg/l				
JAN	1.01	42	44	9	8	1,140	.23	-	-
FEB	1.01	28	37	6	3	1,550	.11	-	-
MAR	1.26	41	53	7	7	1,740	.18	-	-
APRIL	1.10	33	57	5	5	1,300	.17	-	-
MAY	1.14	27	49	4	6	1,310	.14	-	-
JUN	1.15	44	58	7	17	1,280	.24	-	-
JUL	1.01	25	51	13	6	1,140	.13	-	-
AUG	1.26	31	62	23	8	1,250	.19	-	-
SEPT	1.12	66	68	16	12	1,200	.26	-	-
OCT	.99	55	67	8	7	1,270	.13	-	-
NOV	1.50	45	45	10	17	1,930	.11	-	-
DEC	1.39	60	44	22	8	2,130	.09	-	-
TOTAL	-	-	-	-	-	-	-	-	-
AVERAGE	1.20	41	53	11	9	1,437	.17	-	-

COMMENTS

Due to the low organic loading the aeration section operated most efficiently. The MLSS was maintained at an average of 1437 mg/l. A BOD removal of 46 percent in the primary clarifier also indicates efficient operation.



DIGESTION



SLUDGE DIGESTION and DISPOSAL

WEST SIDE PLANT

MONTH	RAW SLUDGE			DIGESTED SLUDGE			SUPERNATANT		SLUDGE DISPOSAL	
	VOLUME 10 ³ gal	T. S. %	V. S. %	VOLUME 10 ³ gal	T. S. %	V. S. %	VOLUME 10 ³ gal	T. S. %	LIQUID yd ³	DEWATERED yd ³
JAN	61.1	4.2	79	20.0	2.0	61	30.4	-	118	0
FEB	59.2	4.6	80	20.0	2.2	60	27.7	-	118	0
MAR	72.7	4.1	73	24.0	-	-	42.4	-	144	0
APR	65.6	4.2	79	48.0	-	-	32.6	-	287	0
MAY	75.3	4.0	75	10.0	-	-	52.7	-	59	0
JUN	68.6	3.8	73	54.0	-	-	28.7	0	31	0
JUL	61.6	4.1	-	40.0	1.9	-	27.1	-	240	0
AUG	49.5	4.5	-	60.0	2.1	-	15.2	-	360	0
SEPT	61.9	5.2	78	30.0	3.2	60	28.2	-	180	0
OCT	65.7	4.2	79	31.8	2.8	55	41.0	-	189	0
NOV	66.3	3.0	74	21.2	3.1	63	41.0	-	126	0
DEC	67.1	4.7	74	28.0	-	-	37.2	-	151	0
TOTAL	774.6	-	-	387.0	-	-	404.2	-	2291	0
AVERAGE	64.6	4.2	76	32.3	2.5	60	33.6	-	191	0

COMMENTS

A total of 774,600 gallons of raw sludge was pumped to the digesters in 1968. Slightly more than half of this amount was removed from the digester as supernatant. A total of 2291 cubic yards was removed by the sludge haulage contractor. The digesters were 53 percent efficient in the reduction of volatile total solids.

PLANT FLOWS and CHLORINATION

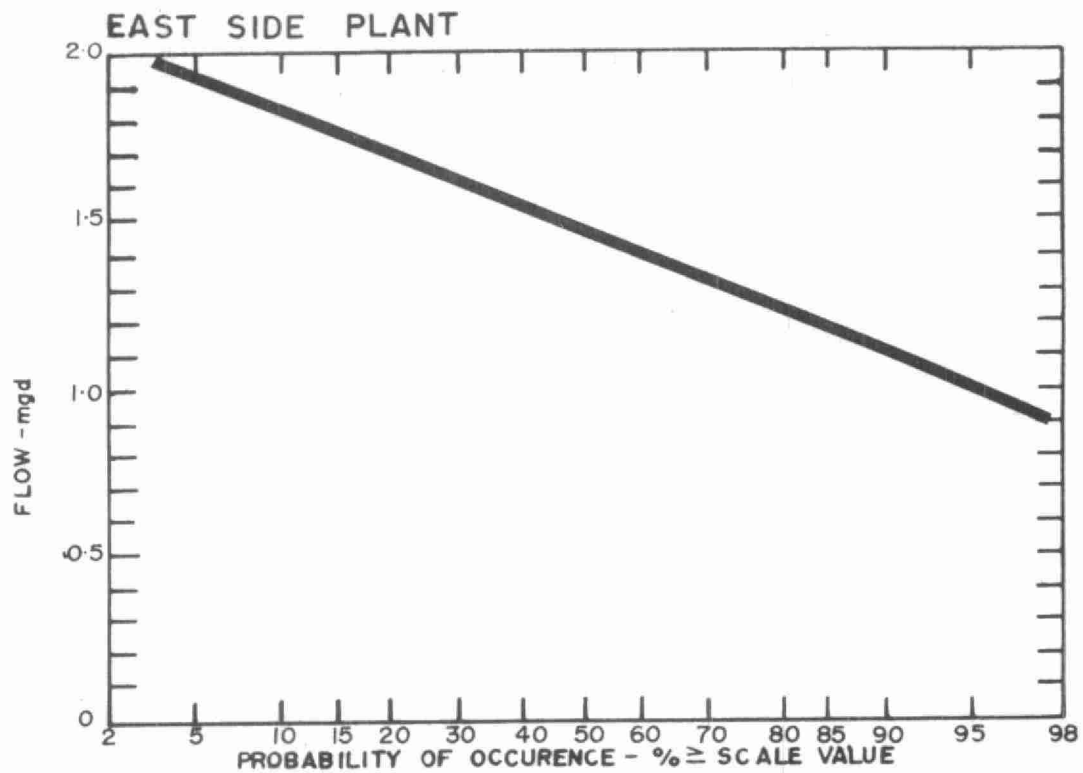
EAST SIDE PLANT

MONTH	TOTAL FLOW mg	AVERAGE DAILY FLOW mg	MAXIMUM DAILY FLOW mg	MINIMUM DAILY FLOW mg	CHLORINE USED lbs.	DOSAGE mg/l
JAN	38.42	1.24	1.85	.91	-	-
FEB	35.66	1.23	1.81	.93	-	-
MAR	44.89	1.45	1.99	1.02	-	-
APR	45.71	1.52	1.87	.615	-	-
MAY	48.24	1.56	1.74	1.33	-	-
JUN	40.64	1.31	1.72	1.25	-	-
JUL	40.64	1.31	1.72	1.16	-	-
AUG	39.08	1.26	1.75	.87	-	-
SEPT	35.02	1.17	1.85	.80	-	-
OCT	35.17	1.14	1.50	.95	-	-
NOV	44.80	1.49	1.90	1.20	-	-
DEC	49.05	1.58	2.00	1.20	-	-
TOTAL	501.45	-	-	-	-	-
AVERAGE	-	1.37	-	-	-	-

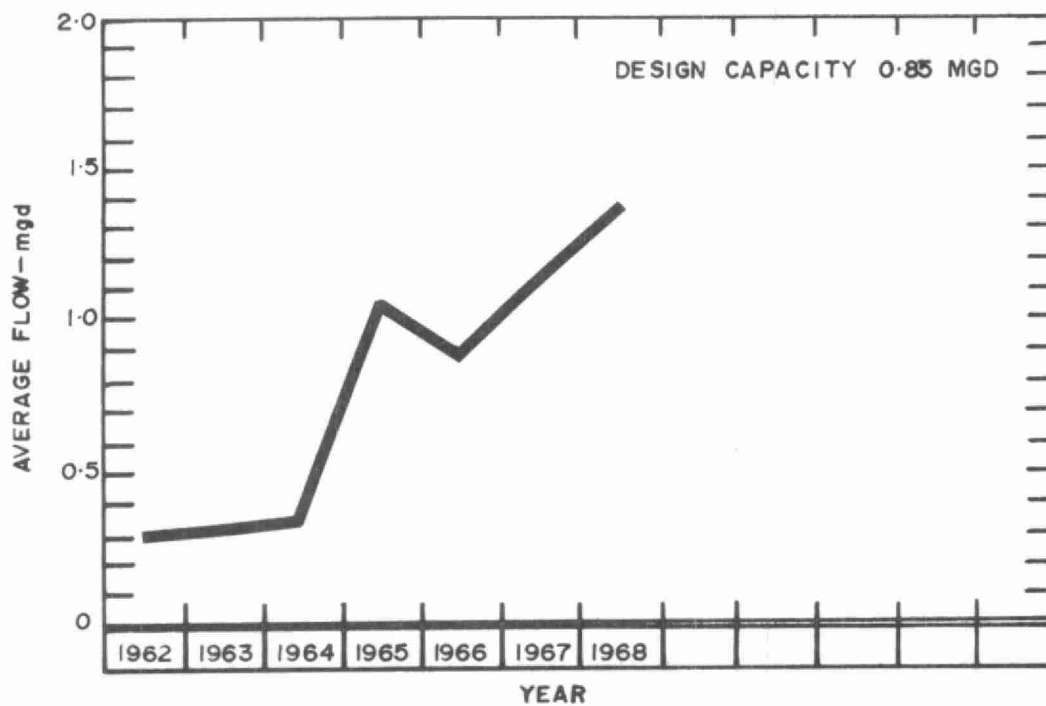
COMMENTS

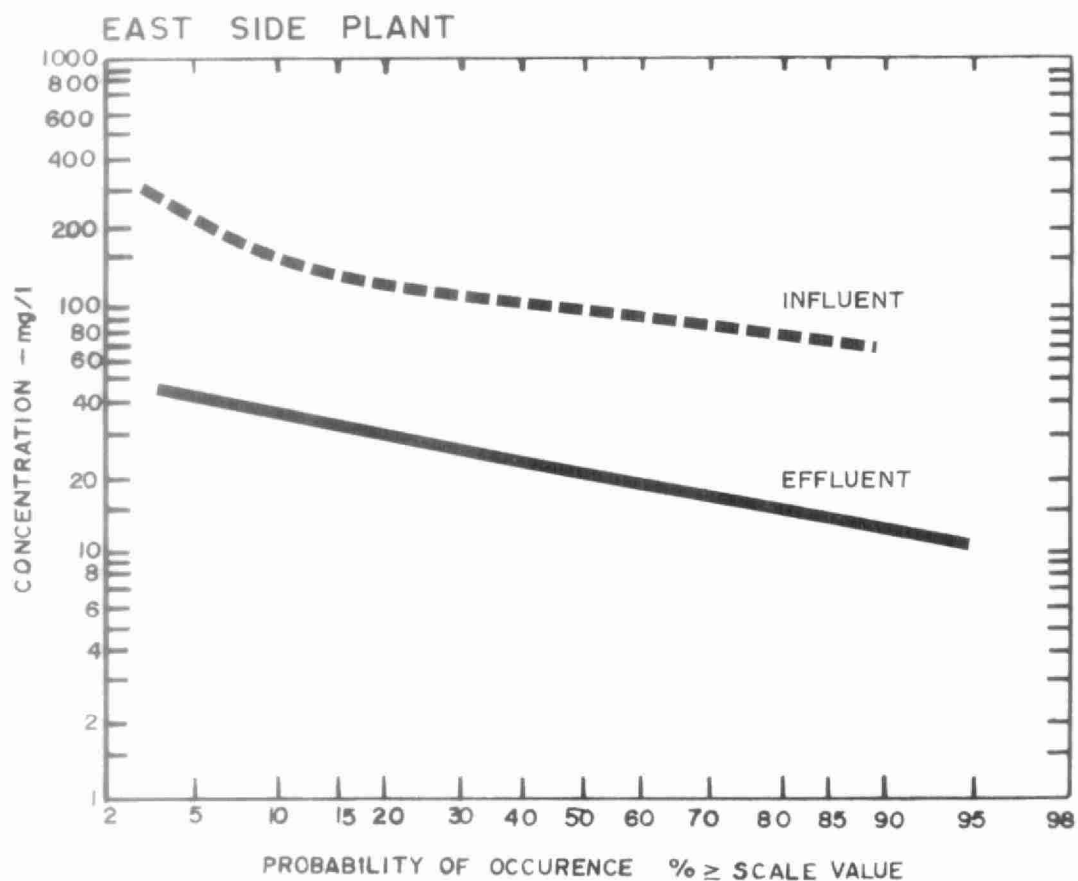
During 1968 a total flow of 501.45 mg of raw sewage was received at the plant. This represents an increase of 20 percent over the 1967 total flow. The average daily flow was 1.37 million gallons and the maximum average daily flow for one month of 2.00 million gallons occurred in December. As in previous years, there was considerable bypassing of raw sewage to the canal when the flow exceeded the hydraulic capabilities of the plant. The hydraulic capabilities of the plant were further restricted in 1968 by the refurbishing periods on the aeration section. This work was partially completed in 1968.

The graph of Probability of Occurrence indicates that this plant operated continually above its design capacity.

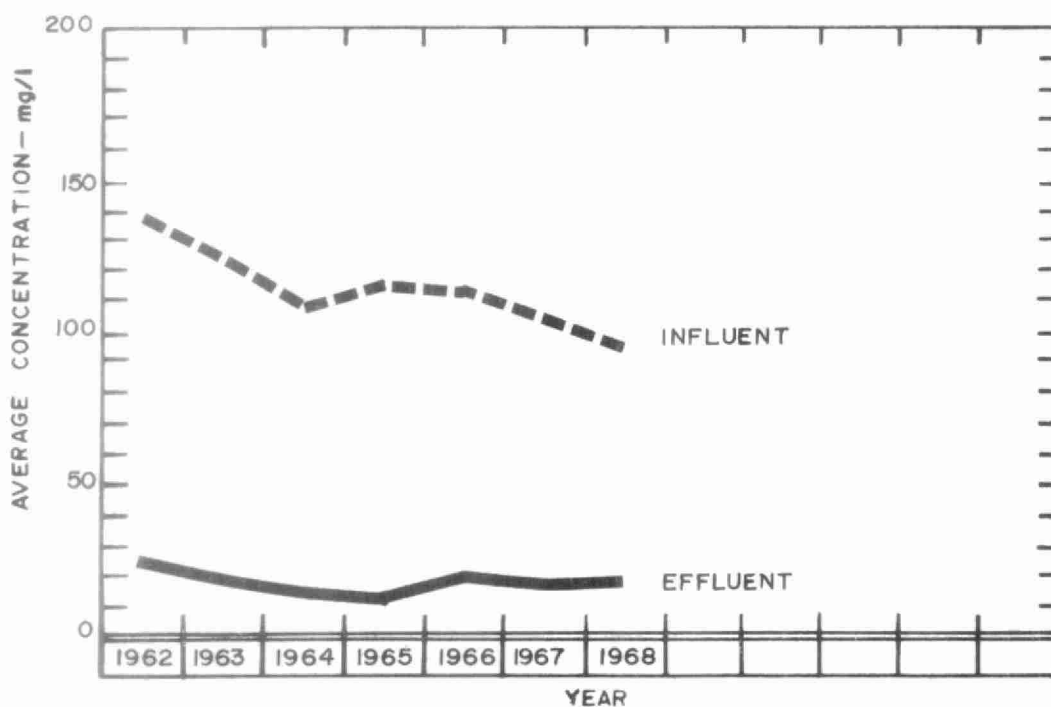


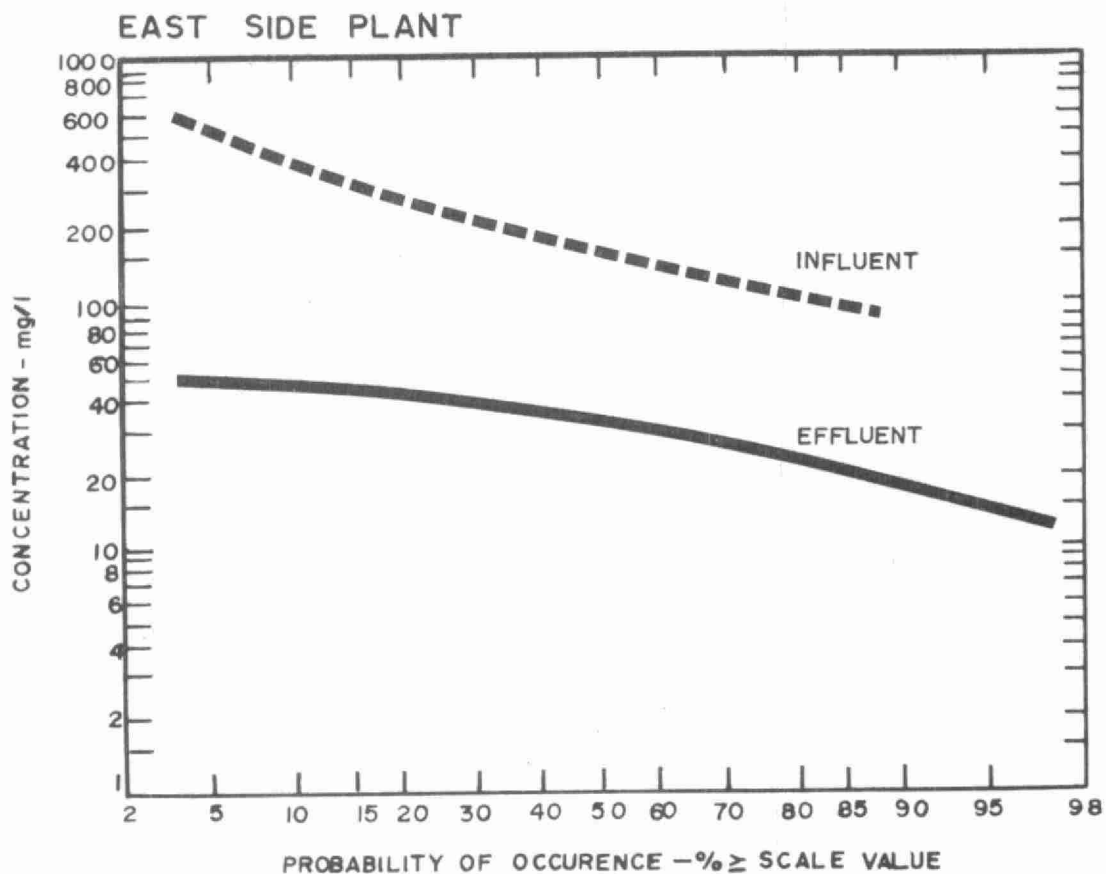
F L O W S



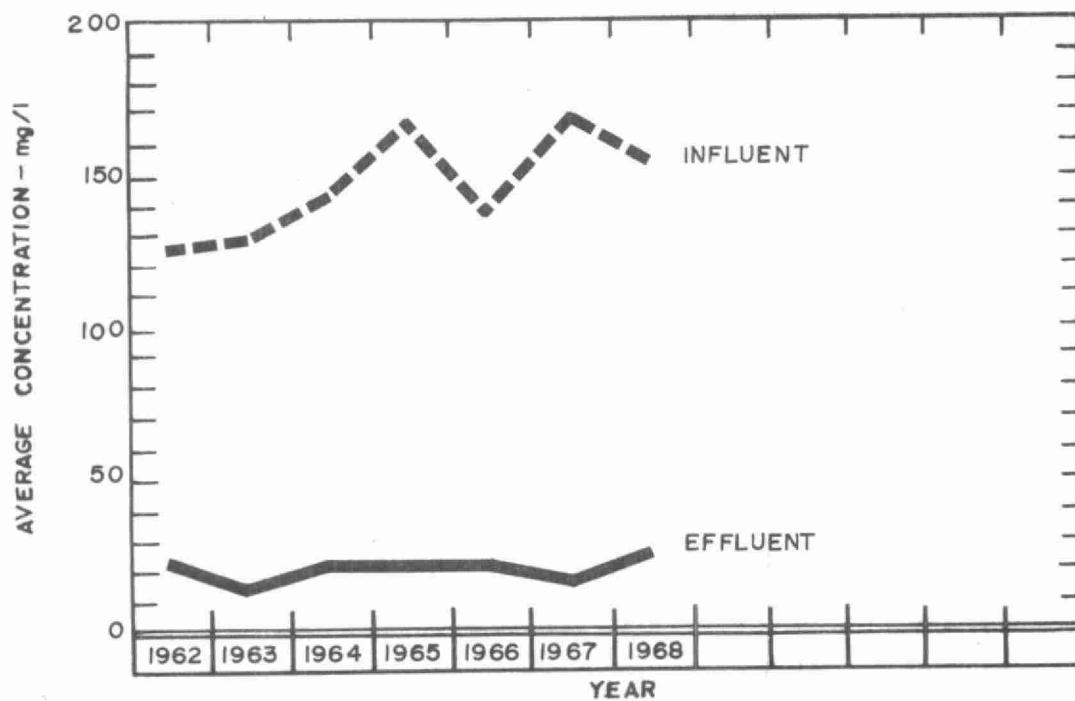


BIOCHEMICAL OXYGEN DEMAND





SUSPENDED SOLIDS



PLANT EFFICIENCY

EAST SIDE PLANT

MONTH	BIOCHEMICAL OXYGEN DEMAND				SUSPENDED SOLIDS				GRIT
	INF CONC ^N mg/l	EFF CONC ^N mg/l	RED ^N %	REMOVAL 10 ³ lb	INF CONC ^N mg/l	EFF CONC ^N mg/l	RED ^N %	REMOVAL 10 ³ lb	REMOVAL ft ³
JAN	98	22	78	29.2	121	27	78	36.1	0
FEB	55	35	36	7.1	64	43	33	7.4	34
MAR	68	30	59	17.1	84	35	58	22.0	0
APR	165	22	87	65.4	315	33	90	128.9	12
MAY	104	9	91	45.8	143	16	89	61.3	22
JUN	100	18	82	36.7	179	37	79	63.6	0
JULY	71	21	70	20.3	135	30	78	42.7	0
AUG	59	18	70	16.0	92	19	79	28.5	38
SEPT	115	18	84	34.0	153	22	86	45.9	28
OCT	111	23	79	31.0	238	30	87	73.2	0
NOV	113	13	88	44.8	203	11	95	86.0	0
DEC	69	10	86	28.9	136	25	82	54.4	8
TOTAL	-	-	-	376.3	-	-	-	650.0	142
AVERAGE	94	20	79	31.3	155	27	82	54.2	12

COMMENTS

The BOD and suspended solids of 94 mg/l and 155 mg/l respectively were higher than those at the West Side plant, but were still below the anticipated values for normal domestic sewage. The treatment efficiencies of 79 percent BOD reduction and 82 percent suspended solids reduction were adequate when the treatment facilities and the wide flow variations are considered.

The accompanying chart does not reflect the large quantities of raw sewage bypassed during high flows nor does it reflect flows bypassed during repairs to the aeration section. The quantity of grit removed averaged 24 cubic feet per month which is a decrease from the 1967 value of 27 cubic feet.

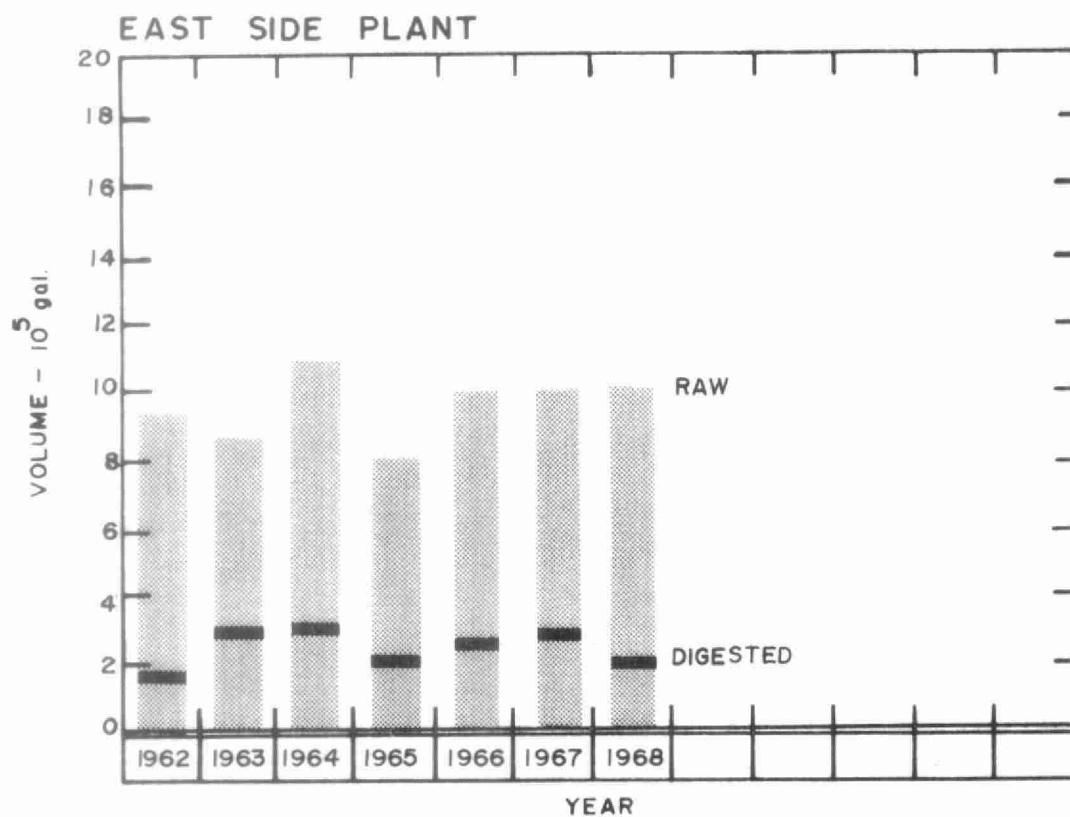
AERATION

EAST SIDE PLANT

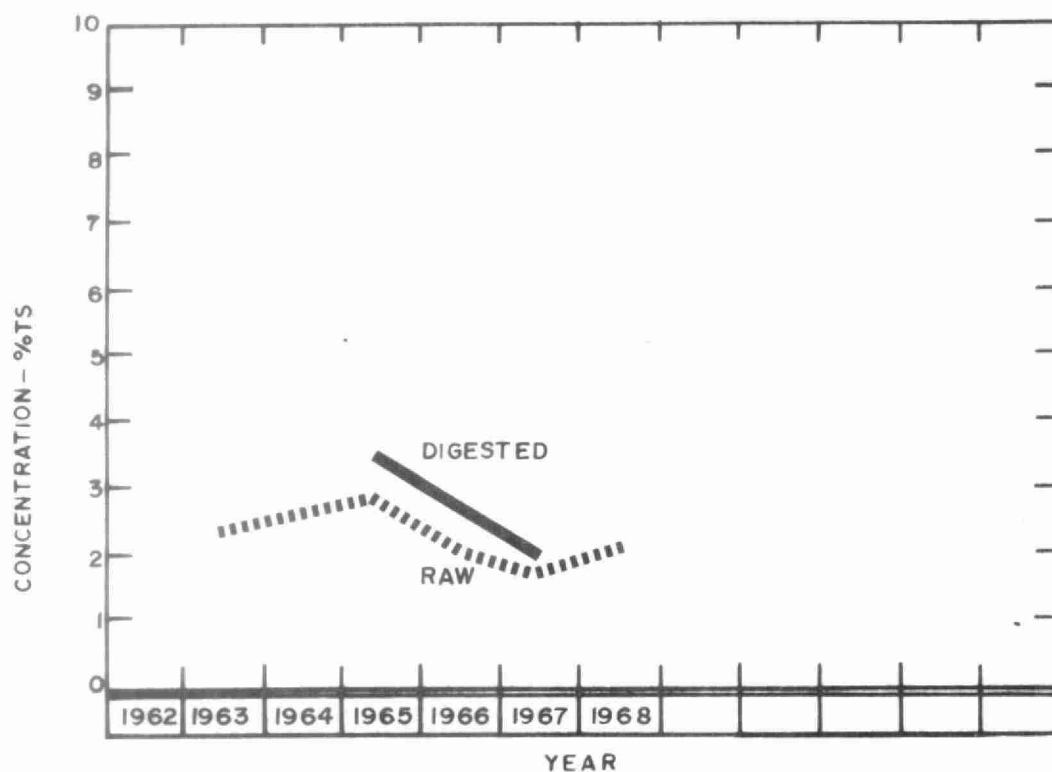
MONTH	AVERAGE FLOW mgd	INFLUENT		SECONDARY EFF		MLSS CONC ^N mg/l	F/M $\left(\frac{\text{lb BOD}}{\text{lb MLSS}}\right)$	AIR USED $\left(\frac{1000 \text{ ft}^3}{\text{lb BOD}}\right)$ REMOVED	WASTE SLUDGE lb
		BOD CONC ^N mg/l	SS CONC ^N mg/l	BOD CONC ^N mg/l	SS CONC ^N mg/l				
JAN	1.24	98	22	22	27	2,230	.50	-	-
FEB	1.23	55	35	35	43	2,140	.29	-	-
MAR	1.45	68	30	30	35	2,230	.23	-	-
APRIL	1.52	165	22	22	33	1,810	.63	-	-
MAY	1.56	104	143	9	16	2,420	.30	-	-
JUN	1.49	100	179	18	37	2,450	.44	-	-
JUL	1.31	81	135	21	30	2,120	.40	-	-
AUG	1.26	59	92	18	19	2,100	.32	-	-
SEPT	1.17	115	153	18	22	2,050	.43	-	-
OCT	1.14	111	238	23	30	2,100	.27	-	-
NOV	1.49	113	203	13	11	2,150	.36	-	-
DEC	1.58	69	136	10	25	2,180	.23	-	-
TOTAL	-	-	-	-	-	-	-	-	-
AVERAGE	1.37	94	116	20	27	2,170	.37	-	-

COMMENTS

Due to the removal of one bay from the aeration section for repairs, a high f/m ratio was experienced during the repair period. An average of 2170 mg/l suspended solids was maintained in the aeration tank during 1968.



DIGESTION



SLUDGE DIGESTION and DISPOSAL

EAST SIDE PLANT

MONTH	RAW SLUDGE			DIGESTED SLUDGE			SUPERNATANT		SLUDGE DISPOSAL	
	VOLUME 10 ³ gal	T. S. %	V. S. %	VOLUME 10 ³ gal	T. S. %	V. S. %	VOLUME 10 ³ gal	T. S. %	LIQUID yd ³	DEWATERED yd ³
JAN	95	1.6	80	42	-	-	67	-	249	0
FEB	36	3.8	79	22	-	-	35	1.7	131	0
MAR	92	1.4	80	10	-	-	83	0.1	59	0
APR	90	1.8	80	28	-	-	108	0.1	166	0
MAY	93	2.3	77	10	-	-	84	-	59	0
JUN	95	2.5	75	24	-	-	102	-	142	0
JUL	93	2.5	73	0	-	-	92	-	0	0
AUG	90	2.4	74	30	-	-	74	-	178	0
SEPT	83	2.5	74	13	-	-	60	0.1	76	0
OCT	91	1.1	76	19	-	-	76	0.1	113	0
NOV	89	1.9	78	11	-	-	69	0.8	63	0
DEC	80	2.3	62	15	-	-	59	-	88	0
TOTAL	1026	-	-	224	-	-	909	-	1324	0
AVERAGE	86	2.2	76	19	-	-	76	0.5	111	0

Note: Holding tank considered part of digestion system.

COMMENTS

A total of 1,026,500 gallons of raw sludge was pumped to the digester. A large percentage of this amount was returned to the plant as supernatant with the remainder removed by the sludge haulage contractor.

[illegible]



CONCLUSIONS

The West Side plant produced a satisfactory effluent in 1968. The plant continued to receive a larger hydraulic load than the dry weather design flow.

The East Side plant was constantly overloaded, which resulted in the frequent bypassing of the treatment facilities. Renovations to one bay of the aeration section were completed in 1968.

RECOMMENDATIONS

West Side Plant

A program for reducing storm and ground water infiltration should be undertaken by the municipality.

East Side Plant

A program of required minimum renovations must be completed in order to ensure adequate treatment is given to a larger portion of the East Side flows.

In addition a program for reducing storm and ground water infiltration should be undertaken by the municipality.



Water management in Ontario